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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,763	12/15/2003	Rajanik Mark Jayasuriyar	ALBAN15.001AUS	5717

20995 7590 10/18/2006

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EXAMINER	
NGUYEN, TU X	

ART UNIT	PAPER NUMBER
2618	

DATE MAILED: 10/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/736,763	JAYASURIYAR ET AL.	
	Examiner	Art Unit	
	Tu X. Nguyen	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/15/03,7/23/04,9/7/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 12/15/06, 7/23/06 and 9/7/05, were being considered by the examiner.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3, 5-11, 13-20, 22, 24-38, are rejected under 35 U.S.C. 102(e) as being anticipated by Hall et al. (US Patent 6,999,446).

Regarding claim 1, Hall et al. disclose a digital communication system for communication between a first terminal (see fig.1, element 10) and a second terminal (see fig.1 element 11), the first terminal comprising a spread spectrum modulator (see fig.2, element 26, see col.2 lines 6-10, "a subscriber station" corresponds to "a first terminal", "a base station" corresponds to "a second terminal") configured to spread a transmitted signal, the transmitted signal being spread by a spread factor (see col.2 lines 14-20).

Regarding claim 3, Hall et al. disclose the spread factor is in the range of 10 to 50 (see col.2 lines 19-20, Hall et al. meets the limitation with a broader range 1-128).

Regarding claim 5, Hall et al. disclose the spread spectrum modulator is selected from one of a direct sequence spread spectrum (see col.4 lines 15-16) modulator (see fig.2, element 26, col.5 lines 5-6) and a frequency hopping spread spectrum modulator (see col.10 lines34-36 and col.18 lines 61-62).

Regarding claim 6, Hall et al. disclose second terminal comprises a spread spectrum demodulator (see fig.2, element 34, col.5 lines 9-10).

Regarding claim 7, Hall et al. disclose the spread spectrum demodulator is selected from one of a direct sequence spread spectrum (see col.4 lines 15-16) demodulator (see fig.2, element 34, col.5 lines 9-10) and a frequency hopping spread spectrum demodulator (see col.10 lines34-36 and col.18 lines 61-62).

Regarding claim 8, Hall et al. disclose the direct sequence spread spectrum modulator forms part of a first terminal modem (see col.4 lines 15-16, the upstream corresponds to the first terminal sending a modulated carrier frequency to the base station. A use equipment 12 shown in figured 1 included a modulator and demodulator for modulating and demodulating carrier frequency and a transceiver for transmitting and receiving carrier frequency reads on "a first terminal modem").

Regarding claim 9, Hall et al. disclose the first terminal modem comprises at least one of the following: an interface (see col.7 lines 56-57), a microprocessor, a forward error correction encoder, a further modulator, an up converter, a block up converter, and an amplifier.

Regarding claim 10, Hall et al. disclose the direct sequence spread spectrum demodulator forms part of a second terminal modem (see col.4 lines 15-17, the system is two-way communication and the second terminal is included a demodulator, see col.5 lines 3-10).

Regarding claim 11, Hall et al. disclose the second terminal modem comprises at least one of the following: a block converter, a down converter, a microcontroller, and an interface (see col.7 lines 56-57).

Regarding claim 13, Hall et al. disclose the second terminal modem is part of a second terminal processing equipment, the second terminal processing equipment comprising at least one of the following: a transmit reject filter, a block converter, and a microcontroller (see col.4 lines 55-66, Hall et al. teaching a base station serving multiple mobile terminals is considered including a microcontroller to perform the tasks for frequency select, channel access, etc.).

Regarding claim 14, Hall et al. disclose first terminal is a remote terminal and the second terminal is a hub terminal (see col.2 lines 5-10, "subscriber station" corresponds to "a remote terminal" and "a base station" corresponds to "a hub").

Regarding claim 15, Hall et al. disclose the reduction of noise relative to a signal (see col.2 lines 28-29, in CDMA system users occupy the same time and frequency allocations, and are channelized by unique assigned codes. The signals are separated at the receiver by using a correlator that accepts only signal energy from the desired channel. Undesired signals contribute only to the noise), the method comprising:

(a) at a first terminal, generating a signal to be transmitted (see col.2 lines 5-10, a subscribers station corresponds to "a first terminal", reverse link corresponds to "generating a signal to be transmitted");

(b) at the first terminal, modulating the signal (see col.5 lines 3-6, Hall et al. teaching a mobile terminal function block including a modulation block) to spread the signal so as to form a spread signal (see col.2 lines 6-20, Hall et al. teaching both a mobile terminal transmit in upstream in spread spectrum codes); and

(c) at the first terminal, transmitting the spread signal (see col.2 lines 6-20, Hall et al. teaching a two ways communication between a mobile terminal and a base station).

Regarding claim 16, Hall et al. disclose the spread signal is received by a second terminal, the second terminal using a demodulator to de-spread the spread signal and any received signal noise (see col.4 lines 15-17, the system is two-way communication and the second terminal is included a demodulator, see col.5 lines 3-10, in CDMA system users occupy the same time and frequency allocations, and are channelized by unique assigned codes. The signals are separated at the receiver by using a correlator that accepts only signal energy from the desired channel. Undesired signals contribute only to the noise).

Regarding claim 17, Hall et al. disclose a method for the reduction of noise relative to a signal, the method comprising:

(a) at a second terminal, receiving a spread signal (see col.4 lines 15-17, the system is two-way communication and the second terminal is included a demodulator, see col.5 lines 3-10, in CDMA system users occupy the same time and frequency allocations, and are channelized by unique assigned codes. The signals are separated at the receiver by using a correlator that accepts only signal energy from the desired channel. Undesired signals contribute only to the noise); and

(b) at the second terminal, using a demodulator to de-spread the spread signal and any received signal noise so as to form the signal and to reduce the received signal noise (see col.2 lines 6-20, Hall et al. teaching a two ways communication between a mobile terminal and a base station and a base station includes a demodulator (fig.2 element 34) to de-spread the spreading codes).

Regarding claim 18, Hall et al. disclose the spread signal is transmitted by a first terminal, the first terminal modulating a transmitted signal to spread the transmitted signal so as to form the spread signal prior to transmitting the spread signal (see col.1 lines 39-40).

Regarding claim 19, Hall et al. disclose the first terminal comprises a spread spectrum modulator configured to spread the transmitted signal, the transmitted signal being spread by a spread factor (see col.2 lines 5-19).

Regarding claim 20, Hall et al. disclose the first terminal comprises a spread spectrum modulator configured to spread the transmitted signal, the transmitted signal being spread by a spread factor (see col.2 lines 5-19).

Regarding claim 22, Hall et al. disclose the spread factor is in the range of 10 to 50 (see col.2 lines 19-20, Hall et al. meets the limitation with a broader range 1-128).

Regarding claim 24, Hall et al. disclose the spread spectrum modulator is selected from one of a direct sequence spread spectrum (see col.4 lines 15-16) modulator (see fig.2, element 26, col.5 lines 5-6) and a frequency hopping spread spectrum modulator (see col.10 lines34-36 and col.18 lines 61-62).

Regarding claim 25, Hall et al. disclose the spread spectrum modulator is selected from one of a direct sequence spread spectrum (see col.4 lines 15-16) modulator (see fig.2,

element 26, col.5 lines 5-6) and a frequency hopping spread spectrum modulator (see col.10 lines34-36 and col.18 lines 61-62).

Regarding claim 26, Hall et al. disclose second terminal comprises a spread spectrum demodulator (see fig.2, element 34, col.5 lines 9-10).

Regarding claim 27, Hall et al. disclose the spread spectrum demodulator is selected from one of a direct sequence spread spectrum (see col.4 lines 15-16) demodulator (see fig.2, element 34, col.5 lines 9-10) and a frequency hopping spread spectrum demodulator (see col.10 lines34-36 and col.18 lines 61-62).

Regarding claim 28, Hall et al. disclose the direct sequence spread spectrum modulator forms part of a first terminal modem (see col.4 lines 15-16, the upstream corresponds to the first terminal sending a modulated carrier frequency to the base station).

Regarding claim 29, Hall et al. disclose the direct sequence spread spectrum modulator forms part of a first terminal modem (see col.4 lines 15-16, the upstream corresponds to the first terminal sending a modulated carrier frequency to the base station).

Regarding claim 30, Hall et al. disclose the first terminal modem comprises at least one of the following: an interface (see col.7 lines 56-57), a microprocessor, a forward error correction encoder, a further modulator, an up converter, a block up converter, and an amplifier.

Regarding claim 31, Hall et al. disclose the direct sequence spread spectrum demodulator forms part of a second terminal modem (see col.4 lines 15-17, the system is two-way communication and the second terminal is included a demodulator, see col.5 lines 3-10).

Regarding claim 32, Hall et al. disclose the second terminal modem comprises at least one of the following: a block converter, a down converter, a microcontroller, and an interface (see col.7 lines 56-57).

Regarding claim 33, Hall et al. disclose the first terminal modem is part of a first terminal processor (see col.4 lines 55-66, Hall et al. teaching a base station serving multiple mobile terminals is considered inherently including a microcontroller to perform the tasks for frequency select, channel access, etc., A use equipment 12 shown in figured 1 included a modulator and demodulator for modulating and demodulating carrier frequency and a transceiver for transmitting and receiving carrier frequency reads on "a first terminal modem").

Regarding claim 34, Hall et al. disclose the second terminal modem is part of a second terminal processor (see col.4 lines 55-66, Hall et al. teaching a base station serving multiple mobile terminals is considered inherently including a microcontroller to perform the tasks for frequency select, channel access, etc., A base station 10 shown in figured 1 included a modulator and demodulator for modulating and demodulating carrier frequency and a transceiver for transmitting and receiving carrier frequency reads on "a first terminal modem").

Regarding claim 35, Hall et al. disclose the first terminal is a remote terminal and the second terminal is a hub terminal (see col.2 lines 5-10, "subscriber station" corresponds to "a remote terminal" and "a base station" corresponds to "a hub").

Regarding claim 36, Hall et al. disclose a computer readable medium storing a program (see col.1 lines 34-46, the wireless terminal is inherently a computer readable medium and storing program in order to perform of multiple tasks such as encoding the data stream for transmission, multiplexing step forms a data stream having data fields composed of a plurality

of data bytes separated by control message fields) which performs a method for the reduction of noise relative to a signal (see col.2 lines 28-29, in CDMA system users occupy the same time and frequency allocations, and are channelized by unique assigned codes. The signals are separated at the receiver by using a correlator that accepts only signal energy from the desired channel. Undesired signals contribute only to the noise), the method comprising:

(a) at a first terminal, generating a signal to be transmitted (see col.1 line 65 through col.2 line 10, Hall et al. teaching a subscriber station is wirelessly communicate voice and video with a base station in forward and reverse link);

(b) at the first terminal, modulating the signal to spread the signal so as to form a spread signal (see col.2 lines 16-21); and

(c) at the first terminal, transmitting the spread signal (see col.2 lines 5-20).

Regarding claim 37, Hall et al. disclose a computer readable medium storing a program (see col.1 lines 34-46, the wireless terminal is inherently a computer readable medium and storing program in order to perform of multiple tasks such as encoding the data stream for transmission, multiplexing step forms a data stream having data fields composed of a plurality of data bytes separated by control message fields) which performs a method for the reduction of noise relative to a signal, the method comprising:

(a) at a second terminal, receiving a spread signal (see col.1 line 65 through col.2 line 10, Hall et al. teaching a subscriber station is wirelessly communicate voice and video with a base station in forward and reverse link); and

(b) at the second terminal, demodulating the spread signal including a de-spread of the spread signal and any received signal noise so as to form the signal and to reduce the

received signal noise (see col.5 lines 1-10, col.2 lines 28-29, in CDMA system users occupy the same time and frequency allocations, and are channelized by unique assigned codes. The signals are separated at the receiver by using a correlator that accepts only signal energy from the desired channel. Undesired signals contribute only to the noise).

Regarding claim 38, Hall et al. disclose a method for the reduction of noise relative to a signal, the method comprising:

at a first terminal, generating a signal to be transmitted (see col.1 line 65 through col.2 line 10, Hall et al. teaching a subscriber station is wirelessly communicate voice and video with a base station in forward and reverse link, "a subscriber station" corresponds to "a first terminal");

at the first terminal, modulating the signal to spread the signal so as to form a spread signal (see col.2 lines 16-21);

at the first terminal, transmitting the spread signal (see col.1 line 65 through col.2 line 10, Hall et al. teaching a subscriber station is wirelessly communicate voice and video with a base station in forward and reverse link, "a base station" corresponds to "a second terminal");

at a second terminal, receiving the spread signal (see col.1 line 65 through col.2 line 10, Hall et al. teaching a subscriber station is wirelessly communicate voice and video with a base station in forward and reverse link, "a base station" corresponds to "a second terminal"); and

at the second terminal, demodulating the spread signal, including a de-spread of the spread signal and any received signal noise so as to form the signal and to reduce the received signal noise (see col.5 lines 1-10, col.2 lines 28-29, in CDMA system users occupy the same time and frequency allocations, and are channelized by unique assigned codes. The

signals are separated at the receiver by using a correlator that accepts only signal energy from the desired channel. Undesired signals contribute only to the noise).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2 and 21, are rejected under 35 U.S.C. 103(a) as being obvious over Hall et al. (US Patent 6,999,446).

Regarding claims 2 and 21, Hall et al. disclose spreading factor up to 128 chips/symbol. However, Hall et al. fail to disclose the spread factor is in the range of 1 to 999. The Examiner takes an Official notice is taken that the concept the spread factor is in the range of 1 to 999 is well known in the art. The spreading fact as Hall et al. shown in Hall et al., figure 13, such as higher spreading factor chips/symbol to produce lower the symbol rate. Therefore, it would have been obvious the modulation and/or transmission in a digital communication system with low symbol rate is achievable at the higher spread factor than 128 chips/symbol will produce a symbol rate lower than 21.25 ksps, eventually the symbol rate will near to zero when the spreading factor increased.

Claims 4 and 23, are rejected under 35 U.S.C. 103(a) as being obvious over Reisinger et al. (US Pub. 2002/0041587).

Regarding claims 4 and 23, Hall et al. teaching a spread fact in range 1-128. However, Hall et al. fail to specifically disclose the spread factor is 31.

In the related art, Direct Sequence Spread Spectrum transmission, Reisinger et al. disclose the spread factor is 31 (see par.40). Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Hall et al. with the teaching of the spread factor is 31 of Reisinger et al. in order achieve a favorable signal-to-nose ratio at a high gain 15DB.

Claim 12, is rejected under 35 U.S.C. 103(a) as being obvious over Hall et al. (US Patent 6,999,446) in view of Mahany (US Pub. 2004/0077353).

Regarding claim 12, Hall et al. teaching a mobile terminal in a direct sequence spread spectrum with an air interface, a modulator and demodulator to modulate and demodulate carrier frequencies; however, Hall et al. fail to specifically disclose an amplifier.

In the related art, a data transceiver mobile for digital data communications in a portable handheld data terminal has multiple data spread spectrum modes which include direct sequence frequency modulation, Mahany disclose an amplifier (see par.0182). Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Hall et al. with the amplifier teaching of Mahany in order to provide the received signal is amplified sufficiently to overcome any noise which may be represent on the input RF data signal.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed Tu Nguyen whose telephone number is 571-272-7883.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban, can be reached at (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

October 11, 2006